

# Richmond Refinery LPS Alert – Reliability



## K3550 S/D on Inst Air Loss to Governor Oil



IPS Control: 1995326

**Location: 4CAT, K-3550  
Distilling & Reforming**

**Contact Information:**

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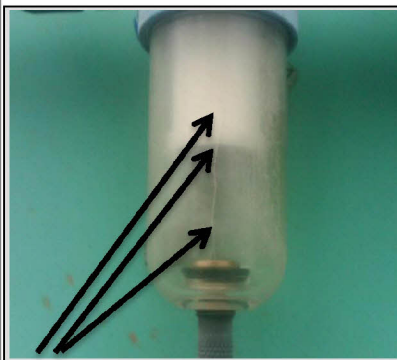
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**For Reference:**



Air Supply/Solenoid Panel



Cracked Air Filter Bowl

***Always remember to do  
your LPSA – because  
we care about you!***

### Incident Description:

Emergency Shutdown Alarm 35UA300 for 4CAT recycle compressor K3550 activated at 11:00pm on August 1, 2010. There was no loss of hydrogen recycle flow or any indication this compressor had shutdown. An outside operator confirmed that K3550 was still running. However, at 11:53pm, as the crew continued troubleshooting 35UA300, which had not yet cleared, 48 alarms activated indicating a loss of recycle H2 flow. K3550 shutdown without any alarms to indicate any trouble such as losses of lubrication or seal oil, or high vibration or level.

In summary, the following occurred:

1. The 35UA300 shutdown alarm activated at 11:00pm.
2. Operators check K-3550 and find that it is still running.
3. Operators receive indications of a K-3550 shutdown at 11:53pm.
4. Operators again check K-3550 and find that it has shut down.
5. Operators finds a cracked air filter bowl that is compromising air supply to the dump valve solenoids. There was no indication of when the air filter bowl broke.

### Immediate Actions Taken:

- 4CAT furnaces went to minimum firing; chopped fuel gas to shut down.
- Reactors depressured to relief header, which caused visible flaring though reportable quantities were not exceeded.
- Other D&R plants remained online and other areas adjusted H2 loads.
- K-3550 and furnaces were restarted the same shift and feed was restored on day shift August 2. As such, this was not a “clock reset”.
- **Replaced broken filter bowl and inspected others. One other filter bowl was cracked (also located at K3550) and was replaced as well.**
- **Recommend Ops inspect their areas for cracked filter bowls as well as other similar components (see pictures).**

## LOSS PREVENTION SELF-ASSESSMENT

**BEFORE BEGINNING ANY ACTIVITY/TASK/JOB, AFTER A LOSS OR NEAR LOSS, ANY UNUSUAL CIRCUMSTANCES:**



### **ASSESS** the risk!

What could go wrong?

What is the worst thing that could happen if something does go wrong?

### **ANALYZE** how to reduce the risk!

Do I have all the necessary Training and Knowledge to do this job properly?

Do I have all the proper Tools and Personal Protective Equipment?

### **ACT** to ensure loss-free operations!

Take necessary Action to ensure the job is done properly!

Follow written procedures! Ask for assistance, if needed!

**DO NOT PROCEED UNLESS ALL RISKS HAVE BEEN ADDRESSED!**

**For Everyone • Every Day • All the Time**

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